

REMARKS

The Office Action dated January 15, 2004, and made final, has been carefully reviewed and the foregoing amendment has been made in consequence thereof.

Claims 1-4 and 6-20 are now pending in this application. Claims 1, 2, 4, and 6-20 stand rejected. Claim 3 is objected to. Claim 7 has been amended. New Claim 21 has been added.

A fee calculation sheet is submitted herewith for newly added Claim 21.

The objection to the specification is respectfully traversed. The specification has been amended for consistency with Figure 4, thereby providing antecedent basis for the language of Claim 14. Accordingly, Applicants respectfully request that the objection to the specification be withdrawn.

The undersigned wishes to thank Examiner Duong for the courtesies extended in a telephonic interview on March 3, 2004, in which clarification of the claim rejections was requested and inquiry was made regarding the entry of proposed amendments. It was agreed that in the detail explanation of claim rejections, the rejection of Claims 1-4 and 6-13 should have been directed to Claims 1, 2, 4, and 6-13 in light of the objection to Claim 3, and the Office Action will be responded to accordingly. It was further agreed that the response to the presently pending Office Action would require a Request for Continued Examination for entry of the proposed claim amendments.

The rejection of Claims 1, 2, 4, and 6-13 under 35 U.S.C. § 103(a) as being unpatentable over C.A. Heuer (U.S. Patent No. 3,173,479) in view of Kawabata et al. (U.S. Patent No. 5,211,219) is respectfully traversed.

Heuer describes a unitary heat exchanger fabricated from superposed sheets of metal brazed or pressure welded together to form a flat sheet element (1). A weld inhibiting material (2) is applied between the superposed sheets to define two patterned fluid passageways (5) and (6) joined by an intermediate passageway (7). The sheet element (1) is spirally wound about a central opening (11) into a coil (10) having two substantially

cylindrical convolutions (12) and (13), each including one of the patterned fluid passageways (5), (6) between terminal portions (15), (16) and (17), (18). An offset portion (14) includes the interconnecting passageway (7). The sheet element (1) is also provided with a plurality of louvered transfer openings (19) that extend at an angle out of the face of the element. The spiral element can be used as a condenser (10) mounted on a base (26) with a compressor unit (27) within the central opening (11) of the condensor. A fluid impeller (28) is also disposed within the central opening (11).

Kawabata describes a heat exchanger (10) for an air conditioner. The air conditioner includes a rectangular box-shaped casing (1) that has an air inlet (2) at in upper surface and an air outlet (4) at a corner of a lower part. An air flow passage (5) is formed in the casing (1) and extends from the inlet (2) to the outlet (4). The heat exchanger (10) and a cross-flow fan (6) are arranged in series in the air flow passage (5). The heat exchanger (10) includes a plurality of modules (11) arranged in vertical layers. Each module (11) includes a heat transfer tube (12) and fins (13) connected to the outer surface of the heat transfer tube along a lengthwise direction. Each heat transfer tube (12) includes plural parallel passes (12a) arranged in parallel along the plane crossing at a right angle to the axial direction of the cross-flow fan (6).

Applicants respectfully submit that the Section 103 rejection of the presently pending claims is not a proper rejection. Obviousness cannot be established by merely suggesting that it would have been an obvious to one of ordinary skill in the art to modify Heuer according to the teachings of Kawabata. More specifically, as is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. Neither Heuer nor Kawabata, considered alone or in combination, describe or suggest the claimed combination. Rather, the present Section 103 rejection appears to be based on a combination of teachings selected from multiple patents in an attempt to arrive at the claimed invention.

Specifically, Heuer is cited for teaching of a condenser comprising a spiral tube and a fin member; however, a closer reading of Heuer reveals that Heuer does **not** employ a tube. Rather, the Heuer condenser is formed by applying a weld inhibiting material that forms

passageways between superposed sheets that are pressure welded together. As described, adjacent surfaces of the superposed sheets not separated by weld inhibiting material are welded by hot rolling of the sheets to a desired thickness, after which the resultant sheet element is annealed and fluid pressure is applied to distend the areas with the weld inhibiting material to form passageways (col. 2, lines 19-43). This is consistent with stated objectives in Heuer of providing a one-piece heat exchanger of unitary construction (col. 1, lines 39-43). Though Heuer uses the terms “systems of passageways”, “tubular passageways”, and “tubular cavitations” interchangeably in describing the condenser, it is clear from the described fabrication method that the condenser does not include a tube.

Kawabata is cited for disclosing a wire fin member in a heat exchanger for an air conditioner. The air conditioner includes a case that defines an air flow path combined with a cross flow fan such that there is no incentive to spiral wind the heat exchanger. The wire fin members are included in modules arranged in vertical layers.

Since there is no teaching or suggestion in the cited art of the claimed combination, the Section 103 rejection appears to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicants respectfully requests that the Section 103 rejection of Claims 1, 2, 4 and 6-13 be withdrawn.

As the Federal Circuit has recognized, obviousness is not established merely by combining references having different individual elements of pending claims. *Ex parte Levengood*, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993). MPEP 2143.01. Rather, there must be some suggestion, outside of Applicants’ disclosure, in the prior art to combine such references, and a reasonable expectation of success must be both found in the prior art, and not based on Applicants’ disclosure. *In re Vaeck*, 20 U.S.P.Q.2d 1436 (Fed. Cir. 1991). In the present case, neither a suggestion nor motivation to combine the prior art disclosures, nor any reasonable expectation of success has been shown. Further, the combination of a tube coupled to a wire member teaches away from the Heuer stated objective of a unitary, one-piece condenser.

Claim 1 which recites a method for increasing the efficiency of a refrigerator condenser assembly including a tube and wire member having an inner edge and an outer edge, the method including the steps of “forming the tube and wire member into a spiral including first and second ends and a longitudinal passageway therebetween; closing the first end, thereby preventing longitudinal air flow through the first end; and mounting a rotatable fan blade assembly at the second end of the longitudinal passageway, the fan blade drawing air into the longitudinal passageway substantially perpendicularly to an outer surface of the tube and wire member”.

Neither Heuer nor Kawabata, considered alone or in combination, describe or suggest a method for increasing the efficiency of a refrigerator condenser assembly including a tube and wire member having an inner edge and an outer edge, the method including the steps of forming the tube and wire member into a spiral including first and second ends and a longitudinal passageway therebetween, closing the first end, thereby preventing longitudinal air flow through the first end, and mounting a rotatable fan blade assembly at the second end of the longitudinal passageway, the fan blade drawing air into the longitudinal passageway substantially perpendicularly to an outer surface of the tube and wire member. Moreover, neither Heuer nor Kawabata, alone or in combination, describe or suggest forming the tube and wire member into a spiral including first and second ends and a longitudinal passageway therebetween. Rather, Heuer describes a one-piece condenser wherein patterned fluid passageways are formed by applying weld inhibiting material between sheets of superposed material, and Kawabata describes a heat exchanger wherein modules including wire fin members are arranged in vertical layers.

Accordingly, for the reasons set forth above, Claim 1 is submitted to be patentable over Heuer in view of Kawabata.

Claims 2, 4, and 6 depend from independent Claim 1. When the recitations of Claims 2, 4, and 6 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 2, 4, and 6 likewise are patentable over Heuer in view of Kawabata.

Claim 7 recites an apparatus including “a refrigerator condenser comprising a spiraled tube and wire member”.

Neither Heuer nor Kawabata, considered alone or in combination, describe or suggest an apparatus that includes a refrigerator condenser including a spiraled tube and wire member. Rather, Heuer describes a one-piece condenser wherein patterned fluid passageways are formed by applying weld inhibiting material between sheets of superposed material, and Kawabata describes a heat exchanger for an air conditioner wherein modules including wire fin members are arranged in vertical layers.

For at least the reasons set forth above, Claim 7 is submitted to be patentable over Heuer in view of Kawabata.

Claims 8-13 depend from independent Claim 7. When the recitations of Claims 8-13 are considered in combination with the recitations of Claim 7, Applicants submit that dependent Claims 8-13 likewise are patentable over Heuer in view of Kawabata.

For at least the reasons set forth above, Applicants respectfully requests that the section 103(a) rejection of Claims 1, 2, 4, and 6-13 be withdrawn.

The rejection of Claims 14-20 under 35 U.S.C. § 103(a) as being unpatentable over C.A. Heuer (U.S. Patent No. 3,173,479) in view of Kawabata et al. (U.S. Patent No. 5,211,219) and Simmons et al. (U.S. Patent No. 3,865,517) is respectfully traversed.

Heuer and Kawabata are described above. Simmons et al describe a refrigeration condenser unit that includes a housing (1) and a condenser coil (3). A fan (5) is provided for drawing air over the condenser coil (3). The warmed air is discharged through an opening (7) in the housing (1).

Claim 14 recites a refrigerator condenser assembly including “a spiraled tube and wire member comprising a first end, a second end, and a passage therebetween; a fan blade assembly mounted at said second end and external to said passage; and a closure member mounted at said first end, said closure member preventing air from entering said passage through said first end”.

None of Heuer, Kawabata, and Simmons et al., considered alone or in combination, describe or suggest a refrigerator condenser assembly including a spiraled tube and wire

member including a first end, a second end, and a passage therebetween, a fan blade assembly mounted at the second end and external to the passage, and a closure member mounted at the first end, the closure member preventing air from entering the passage through the first end. Moreover, none of Heuer, Kawabata, and Simmons et al., considered alone or in combination, describe or suggest a condenser assembly including a spiraled tube and wire member. Rather, Heuer describes a one-piece condenser wherein patterned fluid passageways are formed by applying weld inhibiting material between sheets of superposed material, Kawabata describes a heat exchanger wherein modules including wire fin members are arranged in vertical layers, and Simmons et al. describe merely a condenser coil with a fan.

Accordingly, for the reasons set forth above, Claim 14 is submitted to be patentable over Heuer in view of Kawabata and further in view of Simmons et al.

Claims 15-20 depend from independent Claim 14. When the recitations of Claims 15-20 are considered in combination with the recitations of Claim 14, Applicants submit that dependent Claims 15-20 likewise are patentable over Heuer in view of Kawabata and further in view of Simmons et al.

For at least the reasons set forth above, Applicants respectfully requests that the section 103(a) rejection of Claims 14-20 be withdrawn.

The objection to Claim 3 is respectfully traversed.

Applicants thank the Examiner for the indication of allowable subject matter in dependent Claim 3. Claim 3 depends from independent Claim 1 which is now submitted to be patentable. Claim 3 is therefore also submitted to be patentable.

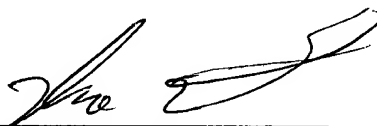
For at least the reasons set forth above, Applicants respectfully request that the objection to Claim 3 be withdrawn.

With regard to newly added Claim 21, Applicants respectfully submit that none of the cited references describes a refrigerator condenser comprising a tube coupled to a wire member and formed into a spiral, the spiraled tube and wire member defining a continuous layered

condenser surface. Accordingly, Applicants submit that Claim 21 is patentable over the cited art.

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read 'Tom Fisher', is written over a horizontal line.

Thomas M. Fisher
Registration No. 47,564
ARMSTRONG TEASDALE LLP
One Metropolitan Square, Suite 2600
St. Louis, Missouri 63102-2740
(314) 621-5070